

## Zero Net Energy Buildings Advisory Council Meeting

May 5, 2010, 9:30AM-12PM

### MEETING NOTES



#### Participants in Attendance:

<b><u>Advisory Council Members</u></b> Fran Boucher, NGRID Mike Browne, Advanced Building Analysis Heather Clark, Biome Studio, LLC Paul Eldrenkamp, Byggmeister, Inc. Jonathan Kantar, Sage Builders Betsy Pettit, Building Science Corporation Carter Scott, Transformations, Inc. Chris Schaffner, The Green Engineer, LLP David Weitz, Conservation Services Group Ellen Watts, Architerra, Inc.	<b><u>Inter-Agency Team Members</u></b> John Ballam, DOER Marc Breslow, EEA Marybeth Campbell, CEC Janet Curtis, DOER Ian Finlayson, DOER Eric Friedman, DOER Spring Greeney, DOER Yaara Grinberg, DOER Debra Hall, OCD Jenna Ide, DCAM Larry Masland, DOER Tony Ransom, DCAM Danya Rumore, DOER Alissa Whiteman, DOER
<b><u>Absent Members</u></b> Bruce Coldham, Coldham & Hartman Architects Penni Connor, NSTAR Jim Hunt, City of Boston Rhonda Spector, MassDevelopment Deborah Rivers, Perkins + Will John Rosenthal, Meredith Management, Co. Mark Walsh-Cooke, ARUP	 Ann Berwick, EEA Karl Brown, MSBA Frank Gorke, DOER Phil Giudice, DOER Meg Lusardi, DOER Tom Riley, DPS-BBRS Alex Sherman, DOER

#### **Welcome and introductions**

*Eric Friedman, Director, Leading by Example Program, DOER*

Eric thanked the council members for attending the meeting. There are many ongoing initiatives DOER is working on, and we are interested to hear any feedback and recommendations the council members might have.

#### **Progress Reports and Updates**

##### **I. IECC and Stretch Codes – Ian Finlayson, Manager, Building and Climate Programs, DOER**

###### **Stretch Code:**

1. As of May 2, twenty-six communities had adopted the Stretch Code; **UPDATE:** *forty-three municipalities have passed stretch code as of May 25.*
2. DOER wanted a dozen or so communities to adopt the Code by July 1; given current adoption success, we may have more than 40 by that date

3. Stretch code – Tues May 11th, noon – minor amendments made at BBRS public hearing to clarify language

#### **IECC 2009**

1. IECC 2009 takes effect July 1 – training ongoing
2. Communities are already pushing forward with IECC 2009

#### **II. MA CHPS (Collaborative for High Performance Schools) – Ian Finlayson, Manager, Building and Climate Programs**

1. 2010 update launched – MA CHPS version 2.0 includes adoption of the Stretch Code
2. Version 1.0 is still posted on Massachusetts School Building Authority website  
\*\*Need to follow-up with MSBA to update website with the new version of MCHPS

#### **III. Global Warming Solutions Act – Ian Finlayson, Manager, Building and Climate Programs**

1. Public hearings to be held in June. For schedule, see:  
[http://www.mass.gov/dep/air/climate/gwsa\\_hearings.htm](http://www.mass.gov/dep/air/climate/gwsa_hearings.htm)
2. Draft framework and 2 consultant reports. To see draft and reports:  
[http://www.mass.gov/dep/air/climate/gwsa\\_docs.htm#implement](http://www.mass.gov/dep/air/climate/gwsa_docs.htm#implement)
3. Greenhouse gas reductions:
  - i. It is estimated that the existing State policies and programs will allow us to achieve a 19% reduction in greenhouse gas emissions
  - ii. Implementation of identified possible changes could achieve up to a 30% reduction
  - iii. The EEA Secretary wants hearings to focus on where—in the range of 15-25% reductions—we should set our GHG reduction target.
  - iv. Eric: remember that we have not actually reached the 19% reduction target and that achieving it requires implementing numerous strategies/programs; this will not just happen on its own (keep this in mind in setting goals and targets)

#### **IV. High Performance Buildings Grant Program – ARRA Funding (Handout provided at meeting)**

*Janet Curtis, Associate Director, Leading by Example Program, DOER*

1. Using ARRA funds, DOER established program to help MA achieve scalable and dramatic improvements in existing building energy performance
2. \$16.25 million available - 11 awards made - 114 proposals submitted requesting a total of \$250 million
3. Great demand for this work, lots of people are interested
4. We need to find more money to invest in these types of projects; the original money came from ARRA

#### **V. DOER ZNEB Website - Janet Curtis, Associate Director, Leading by Example Program**

1. The website: [www.mass.gov/energy/zneb](http://www.mass.gov/energy/zneb)  
\*\*Please go on the website, check it out, and share your thoughts
  - i. Particularly interested in case study ideas, resource links
  - ii. So far there are only residential case studies; we are looking for commercial case studies that are zero or close to zero—projects that help demonstrate the ‘pathway to zero’

#### **VI. Zero Energy Commercial Buildings Consortium (ZECBC) - Eric Friedman, Director, Leading by Example Program**

1. DOER = lone state representative on the committee
2. Working group meeting—just launched 7 working groups

3. Advisory Council participation?
  - i. Given our State experience, we might be able to help them
  - ii. Feedback?

#### **VII. Pacific Northwest National Lab Re-tuning Training Program**

1. Re-tuning = “Retro-commissioning lite.”
2. PNNL staff to come and train on how to re-tune building automation systems (BAS).
3. MA could be the 3<sup>rd</sup> state to get a free training for up to 50 buildings
  - i. We have broadly agreed to work with them; an MOU to be signed
  - ii. Program to start July (estimated start date), will run for 15 months
4. The purpose is to train people who can then go off and do this work
5. They are claiming a 20% reduction in energy use in buildings that they have worked with
  - \*\* We need to identify buildings or operators to work with -BOMA?*
  - \*\* What is the role for utilities in all of this?*
    - *We should get them involved in the training process*
    - *Follow-up with the utilities*

#### **VIII. Leading by Example Program**

1. State building energy tracking and management: Enterprise Energy Management System (EEMS) in process
  - i. Contract awarded to EnerNOC
  - ii. EEMS will result in real-time data by building for up to 17 million square feet
    1. Will enable statewide tracking and prioritization;
    2. Will enable facilities to identify and manage day-to-day energy use
  - iii. Full installation by December 2010
  - iv. First phase has been funded by ARRA; LBE looking to expand
2. Solar on State Buildings
  - i. Almost 4 MW to be installed in 2010
  - ii. Procurements from DCAM, DOER, MWRA
  - iii. Installations at colleges, Deer Island, Logan Airport, prisons, state recycling center, etc.
  - iv. Projects funded through ARRA, CREBs, PPAs, SRECs
3. Financing: Clean Energy Investment Program
  - i. First of its kind in the nation; program internally funds state efficiency and renewable projects through “efficiency bonds”
    1. State bonds at lower interest rate with agency paying back bond out of savings
  - ii. Pipeline of \$237 million over next two years

#### **IX. Workforce Development and Training (Clean Energy Center Update)**

1. MassGREEN coming online in September 2010
2. Equipment Grants—grants to help with training
  - i. Round 1: to be announced next week
  - ii. Round 2: due by May 13
  - iii. Information available online
3. Energy Efficiency Services Innovation
  - i. Soliciting for business plans
  - ii. Will fund between 1-4 pilots

## Commercial Buildings Labeling Efforts

### I. ASHRAE Pilot Program—Building EQ

1. Operational rating based on CBECS avg. & technical scale
  - i. Unlike Energy Star, ASHRAE's scale distinguishes the really good and the really bad
  - ii. Will address asset and operational (unlike Denmark's system, which just has a single rating and only looks at asset rating)
2. 5 Mass. buildings in pilot; 3 public/state, 2 private
  - i. Building audits starting this week
3. Final operational rating label provided in June
  - i. Audit is in part to guarantee that building provides a suitable environment; also might provide preliminary information for future asset auditing
  - ii. ASHRAE is primarily testing their auditing process to make sure that it is accurate enough to move forward
  - iii. Questions:
    - \*\*Is audit just for operational labeling or for asset auditing in the future?*
    - \*\*Are recommendations to come out of auditing?*
  - iv. People are encouraged to get involved!
    - \*\*ASHRAE meeting in Albuquerque in July if anyone is keen to participate...*

### II. National Governor's Association Policy Academy—Existing building asset rating

1. Goal to develop preliminary recommendations for a building energy asset rating by July/August 2010
  - i. Public/private sector team
  - ii. Rating tool/label development and roll-out strategies
  - iii. Expecting to work with IEc on roll-out
2. Looking for support on tool development
  - \*\*Between July and September, there is room for people to help develop this*

## Grant Opportunities (Handout)

### I. E-RIC Building Cluster

1. Obama Admin/DOE has announced a multi-agency funding opportunity to support an Energy Regional Innovation Cluster (E-RIC)
2. MIT and Mass. Clean Energy Center are co-applicants with collaboration from DOER and UMass Amherst.
3. [www.energy.gov/hubs/eric.htm](http://www.energy.gov/hubs/eric.htm)

### II. State Energy Program Funding—Building Retrofits

1. The DOER is preparing an application for between \$2-5 million in Competitive State Energy Program funding from the U.S. DOE for a large-scale deployment of residential building labeling in existing homes.

### III. Commercial Building Partnerships

1. The Lawrence Berkeley National Laboratory, the National Renewable Energy Laboratory, and the Pacific Northwest Laboratory are seeking proposals for building projects to be part of the U.S. Department of Energy's Commercial Building Partnerships initiative.
2. Online applications due by 3pm EST on May 10, 2010.
3. [www.nrel.gov/ap/commercial\\_building\\_partners/call\\_projects.cfm](http://www.nrel.gov/ap/commercial_building_partners/call_projects.cfm)

#### IV. Code Compliance

1. MA has been selected as one of 5 states to collaborate with the DOE and the regional energy efficiency partnership (NEEP) in a 90 percent Energy Code Compliance Pilot Study.
  - i. DOE is rolling out there methodology
  - ii. The funding award is for \$143,000
2. We might be able to test how the Stretch Code (with stricter code and 3<sup>rd</sup> party consulting) affects progress
  - i. Compare communities who have adopted it with those who haven't

### Prospective ZNEB Implementation Plan

#### I. Need for a more formal plan?

1. Lots of work going on, but we haven't been very good at documenting and communicating this (Unlike CA, who is getting lots of credit for all of their work)
2. We have a Task Force Report, but we do not have a formalized/finalized implementation plan or policy
3. A more formal plan could put us on the map and provide us greater coherence and guidance

#### II. We are currently looking at options

1. Who has done what?
  2. Options for a more formal plan/policy?
- \*\* We would love people's thoughts and ideas on this*

### Working Groups

**Purpose: *Prioritization of gaps and strategy development***

**Two groups: 1) Commercial and 2) Residential**

#### I. Commercial

Workgroup Members: Fran Boucher, John Ballam, Chris Schaffner, Heather Clark, Alissa Whiteman, Danya Rumore, Yaara Grinberg, Jenna Ide, Eric Friedman, and Ian Finlayson.

1. Gaps:
  - i. Need to consider 'site' vs. 'source' energy: how do we address this in GHG emission metrics?
    1. E.g. if energy comes from nuclear, what do we do with this?
  - ii. Need for expedited permitting for ZNEB projects
    1. BRA
    2. Model by-law for municipalities
    3. Green Community requirements
    4. How to incentivize ZNEB in urban spaces and redevelopment rather than incentivize Greenfield development?
    5. Ratchet up over time?

- iii. Need for guidance and education on how to deal with/ work with older and historical buildings
  - 1. E.g. address toxic in older window
  - 2. How to deal with historical values?
- iv. Consider community concept to reach 2010
- v. Labeling is a top priority
  - 1. Focus on buildings that we can more easily label and categorize
- vi. Muni Master Plan as ZNEB
  - 1. MAPC Metro Future
- vii. Need to improve connection with and outreach to design communities
  - 1. Possible certification for State projects
- viii. Asset rating disclosure issues (link to added incentives)
- ix. How to deal with cost-effectiveness of ZNEB and utility incentives
- x. Upfront financing needs
- xi. It is key to focus on existing buildings
- 2. Next Steps:
  - i. Another, larger brainstorming session
  - ii. Prioritize issues to focus on: choose 3 or so
  - iii. Identify State needs and how to support these: call on specific programs
  - iv. Start using the Central Desktop to share ideas and keep the conversation going
  - v. Talk to BSA re: metrics
    - 1. Committee to Advance Sustainability

## II. Residential

Workgroup Members: Janet Curtis, Mark Breslow, Mike Browne, Paul Eldrenkamp, Debra Hall, Jonathan Kantar, Larry Masland, Betsy Pettit, Carter Scott, and David Weitz.

- 1. Gaps:
  - EDUCATION & TRAINING
  - Need more training beyond field workers
    - HVAC engineers/mechanicals/architects – training needed
    - Develop parallel effort to STCC not just credit program
    - BSA looking at developing curriculum/setting metrics
      - Continuing education credits in building science needed for contractor supervisors (Department of Public Safety is responsible for developing the requirements.)
      - Require architects and engineers to take classes on energy to re-certify
    - ZNEB “recognition” of certain courses
      - Utilities could require certain training (couple rebates with submittal of Manual J calculations that support equipment and distribution specifications)
      - Load calculations need to be understood and done better; currently, no review of calculations
    - Need INCENTIVES for training
      - Utility incentives? – builders and subcontractors need to meet certain zneb requirements
      - Tie training requirements to building permits
    - Current building code training is confusing. The trainers cover both BASE code and stretch code without making a clear distinction about the differences. The trainers should focus more on the BASE code.

#### DEEP ENERGY RETROFITS

- Need more money!
  - Need seed capital to start revolving loan fund
  - PACE – administrative models needed (model by-laws)
  - S-RECs not solid enough to get capital on new construction
  - NGRID DER form too difficult for homeowners!
  - NGRID need more TA intake for DER
  - NSTAR's commitment to DER seems minimal

#### CONSUMER AWARENESS

- Need to get rating to become a part of real estate listing.
- Earth Advantage (HERS and Energy Star)
- Earth Advantage uses an Energy Performance Score scale which is total building energy. The ZNEB task force has recommended an energy intensity measure of BTU per square foot per year. Ideally, the homes rating would incorporate both scales similar to MA Energy Insight.
- Concern that DOER's DOE application for residential building labeling is relying too much on Energy Advantage because CSG has the franchise rights.

#### 2. Next Steps:

- Paul E. to set-up base camp for working group to communicate and brainstorm issues relevant to residential zneb topics
- Research administrative models for PACE
- Track curriculum development and training efforts across state; coordinate with BSA through Betsy P.

*Next ZNEB Advisory Council meeting: tentative **September 15, 22, or 29?** To be planned closer to the date.*

*\*\* Please check and see if there are any conferences or meetings that may conflict with those dates.*